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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/655,772	09/05/2003	Dan Min Zhou	S232-USA	7230

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SECOND SIGHT MEDICAL PRODUCTS, INC.

12744 SAN FERNANDO ROAD

BUILDING 3

SYLMAR, CA 91342

EXAMINER

KAHELIN, MICHAEL WILLIAM

ART UNIT

PAPER NUMBER

3762

MAIL DATE

DELIVERY MODE

10/08/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/655,772

Applicant(s)

ZHOU ET AL.

Examiner

MICHAEL KAHLIN

Art Unit

3762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21, 22, 24-26 and 28-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21, 22, 24-26 and 28-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/06)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
3. Claims 21, 24, 26, 28, 30, 31, and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Brennen et al. (US 2005/0075709, hereinafter "Brennen") in view of Scrutton et al. (US 3,773,554, hereinafter "Scrutton").
4. In regards to claim 21 Brennen discloses an electrode body having a substrate (122) and a coating comprising a gradient composition comprised of alternating layers of platinum and iridium oxide (Fig. 4 and par. 0030). Brennen does not disclose that the composition comprises a plurality platinum layers and a plurality of iridium oxide layers. Scrutton discloses an electrode formed by a plurality of alternating layers (col. 2, lines 9-

13 and col. 3, lines 36-40) to provide the predictable results of an electrode with excellent adhesion of the metal to the support (col. 2, lines 28-30). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Brennen's invention by providing a plurality of alternating layers to provide the predictable results of an electrode with excellent adhesion of the metal to the support.

5. In regards to claim 24, the surface is rough because it is comprised of sintered particles (par. 0030).
6. In regards to claim 26, the surface is abraded (par. 0008).
7. In regards to claim 28, the gradient composition is electroplated (par. 0030).
8. In regards to claim 30, 0% and 100% are complementary fractions. Therefore, if a layer is pure (100%) platinum, it has a complementary fraction (0%) of iridium oxide.
9. In regards to claim 31, the composition is shown to vary stepwise (Fig. 4).
10. In regards to claim 33, the substrate surface is a platinum trace (par. 0030), and platinum is biocompatible because it is implanted into the human body.
11. Claims 21, 30, 31, and 33 are rejected under 35 U.S.C. 102(a) and (e) as being anticipated by Chow et al. (US 6,389,317, hereinafter "Chow") in view of Scrutton.
12. In regards to claim 21 Chow discloses a plurality of electrodes (Fig. 4) having a substrate (170), and a surface coating of platinum and iridium oxide (86, 88, and col. 7, line 19). Chow does not disclose that the composition comprises a plurality platinum layers and a plurality of iridium oxide layers. Scrutton discloses an electrode formed by

a plurality of alternating layers (col. 2, lines 9-13 and col. 3, lines 36-40) to provide the predictable results of an electrode with excellent adhesion of the metal to the support (col. 2, lines 28-30). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Chow's invention by providing a plurality of alternating layers to provide the predictable results of an electrode with excellent adhesion of the metal to the support.

13. In regards to claim 30, the fractions of platinum and iridium oxide are complementary (1/1 and 0/1 are complementary fractions, regardless of the interaction between the two layers at the interface).

14. In regards to claim 31, Figure 4 shows a stepwise variation in the gradient composition.

15. In regards to claim 33, the substrate comprises platinum, which is biocompatible (col. 7, line 23).

16. Claims 22, 29, and 32 are rejected under 35 U.S.C. 103(a) as obvious over Brennan in view of Scrutton, or in the alternative, Brennan in view of Scrutton and Fabian et al. (US 4,392,927, hereinafter "Fabian"). Brennan discloses the essential features of the claimed invention including utilizing fractalized platinum (par. 0030), of which "platinum gray" is a specific type; and because of this fractalized surface, there is an approximately linear gradient from platinum to iridium oxide. Alternatively, Brennan discloses the essential features of the claimed invention except for a platinum material that is platinum gray or a linear gradient from platinum to iridium oxide. Fabian teaches

an electrode with an approximately linear gradient from interior to exterior (Table I) to provide the predictable result of conserving costly electrode materials and provide mechanical strength. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Brennen's invention with an approximately linear gradient from platinum to iridium oxide to provide the predictable result of conserving costly electrode materials and provide mechanical strength.

17. Further, Brennen discloses the claimed invention but does not disclose expressly the platinum gray material. It would have been an obvious matter of design choice to a person of ordinary skill in the art to modify the fractalized platinum as taught by Brennen with the platinum because applicant has not disclosed that modifying the deposition rate instead of modifying the surface by sintering provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the platinum substrate as taught by Brennen because both fractalized platinum materials are more robust than prior art platinum black materials. Therefore, it would have been an obvious matter of design choice to modify Brennen's invention to obtain the invention as specified in the claims.

18. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brennen in view of Scrutton. Brennen discloses the essential features of the claimed invention except for a surface roughened by sandblasting. It is well known in the art to roughen implants by sandblasting to cheaply improve adhesion to other materials, tissue, or lower contact impedance. Therefore, it would have been obvious to one having

ordinary skill in the art at the time the invention was made to roughen the electrodes of Brennen by sandblasting to provide the predictable results of cheaply improving adhesion to other materials, tissue, or lower contact impedance.

19. Claims 22, 24-26, 28, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chow in view of Scrutton. Chow discloses the essential features of the claimed invention except for a substrate/gradient composition of platinum gray, a substrate surface that is rough/sandblasted/abraded, or an electroplated gradient composition. It is well known in the electrode arts to provide a substrate/gradient composition of platinum gray, a substrate surface that is rough/sandblasted/abraded, or an electroplated gradient composition to provide the predictable results of improved adhesion between substrate and surface material and a surface material that readily fills the intestacies of the substrate material. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a substrate/gradient composition of platinum gray, a substrate surface that is rough/sandblasted/abraded, or an electroplated gradient composition to provide the predictable results of improved adhesion between substrate and surface material and a surface material that readily fills the intestacies of the substrate material.

20. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chow in view of Scrutton and Fabian. Chow discloses the essential features of the claimed invention except for a linear gradient from platinum to iridium oxide. Fabian teaches an electrode with an approximately linear gradient from interior to exterior (Table I) to provide the predictable result of conserving costly electrode materials and provide

mechanical strength. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Chow's invention with an approximately linear gradient from platinum to iridium oxide to provide the predictable result of conserving costly electrode materials and provide mechanical strength.

Response to Arguments

21. Applicant's arguments with respect to claims 21, 22, 24-26, and 28-3 have been considered but are moot in view of the new ground(s) of rejection, necessitated by amendment.

Conclusion

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL KAHELIN whose telephone number is (571)272-8688. The examiner can normally be reached on M-F, 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on (571) 272-4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George R Evanisko/
Primary Examiner, Art Unit 3762

/Michael Kahelin/
Examiner, Art Unit 3762